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CHILD ABUSE AND SEXUAL REVICTIMIZATION IN A FEMALE NAVY RECRUIT SAMPLE

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SUMMARY

Problem. Women who were childhood victims of sexual abuse are at increased risk of sexual revictimization as an adult. Although support for the relationship between child sexual abuse and adult revictimization is substantial, few data exist on the factors that moderate the risk for revictimization following the childhood experience of sexual abuse.

Objectives. The objectives of this study are to investigate further the childhood experiences that place women at risk for sexual revictimization, to assess racial differences in risk for revictimization, and to examine the extent to which sexual experience (number of sex partners) and alcohol problems contribute to the prediction of sexual revictimization.

Approach. A sample of female Navy recruits ($n = 1,140$) were surveyed for histories of child abuse and adult sexual assault. Odds ratios and regression analyses were conducted to determine the effect of childhood sexual abuse, number of sexual partners, and alcohol problems on adult revictimization.

Results. Overall, 57.3% of the female recruits reported some type of childhood abuse, with 40.0% reporting physical abuse (either alone or with sexual abuse) and 39.8% reporting sexual abuse (either alone or in combination with physical abuse). Child sexual abuse was associated with revictimization; 55.4% of women who reported childhood sexual abuse reported subsequent rape, whereas 20.2% of the women who reported no childhood abuse reported rape. The odds ratio indicated that women with a childhood history of sexual abuse were 4.70 times more likely to have been raped. Women reporting a combined childhood history of physical and sexual abuse reported the highest rape rates. Ethnic differences in reports of childhood abuse and rates of revictimization were found. In an analyses of the relative contributions of childhood sexual abuse, number of sex partners, and alcohol problems to the prediction of revictimization (rape), regression analyses indicated that the childhood experience of sexual abuse was the best predictor of subsequent revictimization.

Conclusions. Women with a childhood history of sexual abuse are at increased risk of being sexually revictimized as adults. All ethnic groups were found to have a high risk of revictimization; White female recruits were 4.0 times more likely, Black female recruits were 5.85 times more likely, and Hispanic female recruits 9.41 times more likely to report having been raped if they had been sexually abused in childhood. For all three ethnic groups, the percent of women raped was highest if they had suffered from combined physical and sexual abuse in childhood. These findings, that the combined abuse group was at greater risk of revictimization, are consistent with the findings of previous research which are based upon small samples.

INTRODUCTION

Women who were victims of childhood sexual abuse are at increased risk of sexual revictimization as an adult. Although support for the relationship between child sexual abuse and adult revictimization is substantial (Alexander & Lupfer, 1987; Cloitre, Tardiff, Marzuk, Leon, & Portera, 1996; Koss & Dinero, 1989; Mayall & Gold, 1995; Russell, 1986; Stevenson & Gajarsky, 1992; Urquiza & Goodlin-Jones, 1994; Wyatt, Guthrie, & Notgrass, 1992), few data exist on the factors that moderate the risk for revictimization following the childhood experience of sexual abuse. The present study was designed to investigate the relationship between childhood abuse and sexual revictimization in a Navy recruit sample, to assess racial differences in risk for revictimization, and to examine the extent to which sexual experience (number of sex partners) and alcohol problems contribute to the prediction of sexual revictimization.

Data supporting the relationship between child sexual abuse and adult revictimization come from studies that use a variety of samples and methodologies. Russell (1986) interviewed a probability sample of 930 women and found that 65% of the women sexually abused by family members and 61% of the women sexually abused by someone outside the family were victims of a rape or an attempted rape after the age of 14. In contrast, Russell found that 35% of women without a childhood history of abuse reported a rape or an attempted rape. Alexander and Lupfer (1987) obtained questionnaire data from 586 female undergraduates and found significantly higher rates of adult sexual assault (not defined) among women sexually abused as children (fondled or touched by a family member or older adult in a way that made them feel uncomfortable) compared to women who reported no childhood abuse. Alexander and Lupfer, however, did not report the rates of revictimization for the abused and nonabused women.

Koss and Dinero (1989) examined 14 possible risk factors of sexual assault, as measured by the Sexual Experiences Survey (SES), in a sample of 2,723 college women. Only variables reflecting childhood traumatic experiences, including child sexual abuse (sexual experience before age 14 ranging from exhibitionism to rape), correctly identified rape victims at a rate higher than base rates. Stevenson and Gajarsky (1992) reported a significant relationship between unwanted childhood sexual experiences, defined by 13 behaviors ranging from exhibitionism to intercourse prior to age 16, and unwanted adult sexual experiences, as measured by the SES, in a college student sample. Stevenson and Gajarsky found that 72.3% of women with unwanted childhood

sexual experiences were revictimized as adults. Wyatt et al. (1992) used a stratified probability sample of 248 women who were interviewed about their sexual experiences. Women who experienced contact child sexual abuse were 2.4 times more likely than women without an abuse history to be revictimized as adults.

Urquiza and Goodlin-Jones (1994) interviewed 243 randomly selected college students and found a significant relationship between the experience of contact childhood sexual abuse (contact before the age of 13 years with someone five years older or contact between the ages of 13 and 17 years when the offender was a family member or relative) and rape as an adult. Mayall and Gold (1995) questioned 654 college women and reported a significant relationship between contact childhood sexual abuse occurring before the age of 15 years (with someone five years older), and subsequent adult revictimization (sexual contact after age 15 ranging from fondling to intercourse obtained through physical force or threat with a weapon). Approximately 24.4% of the women with a history of child sexual abuse were sexually assaulted compared to 16.9% of the women without a history of child sexual abuse. No significant relationship was found between noncontact child sexual abuse (exhibitionism) and revictimization.

Although studies of child sexual abuse and adult revictimization vary in terms of the sample selection process, the measures used, the definitions of child and adult sexual abuse, and the data collection methods, the studies reviewed here provide consistent support for the view that women with a childhood history of sexual abuse are at least twice as likely to be sexually revictimized. Further, in a recent review, Messman and Long (1996) concluded not only is there strong evidence of a relationship between childhood sexual abuse and adult revictimization, but that revictimization appears to be related to long-term mental health problems (p. 417).

Wind and Silvern (1992) examined the degree to which different types and combinations of childhood abuse were predictors of adult functioning in women sexually abused as children. The study sample consisted of 259 women working as staff at a university. Wind and Silvern divided their sample into nonabused women, women who were physically abused by their parents before age 16, women who were sexually abused (unwanted sexual contact before age 16 by someone at least 13 and five years older), or women who suffered combined physical and sexual abuse as a child. Women who experienced combined physical and sexual child abuse reported more psychological symptoms on all measures than the nonabused sample and more symptoms on

some measures than the physically or sexually abused groups. Most relevant to the issue of revictimization, only women who suffered combined abuse were at greater risk of adult sexual assault, defined as unwanted sexual contact. No differences in adult sexual assault were found between the physically and sexually abused groups. Wind and Silvern concluded that both physical and sexual child abuse should be studied because the co-occurrence of physical and sexual child abuse significantly increased the consequences of sexual abuse. However, the group of women experiencing both physical and sexual child abuse in the Wind and Silvern study consisted of only 21 women, thus the findings need to be replicated with a larger sample.

Differing rates of adult sexual revictimization by race have been reported by Urquiza and Goodlin-Jones (1994). In a sample of 243 women (137 White, 29 Black, 39 Hispanic, and 38 Asian-American women), rates of child sexual abuse were similar for White and Black women (38.0% and 44.8%, respectively) and lower for Hispanics (25.6%) and Asian-American women (21.1%). Significantly increased rates of adult revictimization were found for White, Black, and Hispanic women who were sexually abused as children with Black women reporting the highest rate of adult rape (61.5% for Black women versus 44.2% for White women and 40.0% for Hispanic women). Revictimization rates as a function of race have not been reported in other studies, thus replication with a larger sample is needed before conclusions can be made that women in any ethnic group who experience child abuse are at greater risk of revictimization. If ethnic differences are found to be reliable, then the interaction between ethnic status and risk factors for revictimization should be examined.

In addition to providing new data on the role of the different types of childhood abuse experiences and women's ethnic status in revictimization, the present study assessed the possible role of sexual experience (number of sex partners) and a history of alcohol problems in the prediction of revictimization. The level of sexual experience was examined because higher levels of sexual activity have been reported in women with a childhood history of sexual abuse compared to women with no child abuse history (Alexander & Lupfer, 1987; Mayall & Gold, 1995; Wyatt et al., 1992). Given that a certain percentage of men are sexually aggressive and that sexually aggressive men are more sexually active (Malamuth, Heavey, & Linz, 1993), the expectation was that the more sex partners a woman has the greater the likelihood she has of encountering a sexually aggressive partner. Women's self-reported level of alcohol problems were

examined because investigators have reported that sexual aggression occurs more often on dates that are characterized by drinking than on dates where no drinking has occurred (Muehlenhard & Linton, 1987). Finally, it was speculated that when a women has more sex partners, which increases the likelihood of dating a man prone to sexually aggressive behavior, and when she has a history of alcohol problems, which increases the likelihood that alcohol is used in social situations, the risk of victimization would be increased.

METHOD

Participants

Participants were 1,891 incoming female Navy recruits located at the Recruit Training Command (RTC), Orlando, Florida, who volunteered to complete a package of questionnaires. After women with incomplete and missing data ($n = 432$) and women who reported peer sexual experiences ($n = 229$) and noncontact child sexual abuse ($n = 90$) were removed, the study sample consisted of 1,140 female recruits.

The mean age of the study sample was 20.6 ($SD = 2.9$) years. The racial composition was 62.2% White (non-Hispanic), 22.0% Black, 8.0% Hispanic, 3.3% Asian American, 1.8% Native American, and 2.6% other ethnic groups. Among the female recruits, 83.6% were single, 1.6% were cohabiting, 10.1% were married, 4.7% were separated/divorced, and 0.1% were widowed. In terms of education, 4.5% had less than a high school education, 53.7% had finished high school, 2.4% had a General Education Development (GED) diploma, 4.5% had attended business school, and 35.0% had attended college (includes respondents with and without degrees). Finally, information was gathered on the recruits' parents' family income in the past year. Among the women, 12.4% indicated \$7,500 or less, 15.3% indicated from \$7,501 and \$15,000, 18.8% indicated from \$15,001 to \$25,000, 20.4% indicated from \$25,001 to \$35,000, 20.5% indicated from \$35,001 to \$50,000, and 12.6% indicated more than \$50,000.

Test Instruments

Demographic and Family History Questionnaire. This questionnaire contained items related to the respondent's age, race, marital status, number of children, educational level, family (parents) income during the past year, and location of primary childhood residence. Questions were asked about the respondent's family structure (e.g., parental separation/divorce), the

respondent's friends (e.g., were friends ever in legal trouble), and the number of different people with which the respondent has had sexual intercourse. Number of sex partners was reported on a nine-point scale where: 1 = none; 2 = one person; 3 = 2-5 people; 4 = 6-10 people; to 9 = over 50 people.

Conflict Tactics Scale (CTS), Parent-Child (PC) version. A modified CTS Form R (Straus, 1990, p. 33) was used to measure female recruits' recall of the techniques used by their parents to resolve parent-child conflicts. The modified CTS PC survey contained 19 items that asked how often a given conflict resolution technique was used by either parents or stepparents during the worst year of the recruit's life before the age of 18 years. Three CTS subscales were scored: the reasoning scale (three items), the verbal aggression scale (six items, a seventh "cry" item was not scored, as recommended by Straus, 1990, p. 37), and the physical violence scale (nine items). The item response format consisted of seven response categories indicating the frequency ("never" to "more than 20 times") that the conflict resolution technique was used. To obtain scores for the three CTS PC subscales, the seven response categories were treated as a 7-point Likert-type scale (scored zero points for "never" to 6 points for "more than 20 times"), and each response score was summed across the items within the three subscales to obtain total subscale scores. This scoring procedure is one of several CTS scoring procedures that has been suggested by the test author (Straus, 1990, p. 36). In the present study, the score on the physical violence scale was used as the measure of childhood physical abuse.

A study that used a similar CTS survey to assess parenting behavior (in the family of origin) during physically abusive and nonabusive parents' childhoods reported internal consistency reliabilities of .47, .83, and .85 for the CTS reasoning, verbal aggression, and physical violence subscales, respectively (Caliso & Milner, 1992). In the present study, the internal consistency reliabilities of .53, .85, and .87 were found for the CTS PC reasoning, verbal aggression, and physical violence subscales, respectively. Several authors have used similar versions of the CTS to demonstrate relationships between a childhood experience of physically abusive parenting behavior and abuse experiences (e.g., Downs, Miller, Testa, & Panek, 1992; Hartz, 1995; Muller, Caldwell, & Hunter, 1994; O'Keefe, 1995; Riggs, O'Leary, & Breslin, 1990; Sack, Keller, & Howard, 1982; Widom & Shepard, 1996).

Michigan Alcoholism Screening Test (MAST). The MAST is a 25-item questionnaire that was designed as a screening device for the detection of alcoholism (Selzer, 1971). However, the MAST has been widely used as a survey instrument for alcohol problems (e.g., Brady, Foulks, & Childress, 1982; Storgaard, Nielsen, & Gluud, 1994). The MAST items have a yes/no response format and weighted item-scoring criteria, which scores 24 MAST items, excluding item 7 from the total score (Selzer, 1971).

During the coding of the surveys, it was noted that some respondents wrote on the MAST that they did not drink and then proceeded to mark all MAST items "no" apparently without reading the items. Marking all items "no" results in a score of 8 points, which is above the cut-off score of 5 points used by Selzer (1971) to indicate that a respondent is an "alcoholic." A nondrinking respondent who read the items would have to answer several of the MAST items with a "yes" to earn a zero score. Therefore, to ensure that participants who had never drunk were not scored erroneously as having alcohol problems, all respondents who marked "no" for all MAST items were excluded from the analyses.

Using male and female psychiatric patients, Zung (1982) reported an internal consistency reliability of .91 for the MAST when the test was used to assess lifetime alcohol problems. Zung also reported a MAST test-retest reliability for lifetime alcohol problems across a one-day interval was .97. In another group of psychiatric patients, Skinner and Sheu (1982) reported that the MAST test-retest reliability for an interval of 4.8 months was .84. In the present study, the internal consistency for the 24-item MAST for lifetime alcohol problems was .69.

With respect to the individual classification rates of MAST scores, Storgaard et al. (1994) reviewed existing validity studies and found variable degrees of test sensitivity, ranging from .36 to .98, and selectivity, ranging from .57 to .96. Although the definition of what constitutes alcoholism varied from study to study, Storgaard et al. indicated that, across studies, a substantial relationship (.91) was found between the MAST classifications and the prevalence of alcohol problems. Although the data suggest caution should be used in using the MAST scores for individual classification purposes, the data indicate that the MAST has some utility as a screening instrument for detecting lifetime alcohol problems, especially when used on a group basis, as in the present study.

Sexual Events Questionnaire (SEQ). A modified version of the Sexual Events Questionnaire (Finkelhor, 1979) was used to assess childhood sexual experiences. The questionnaire began by asking respondents to indicate (by marking either "yes" or "no") their experience with several types of sexual acts before the age of 14. The acts were listed in hierarchical order of severity, from seeing another person's sexual organs to having vaginal intercourse with a member of the opposite sex. For the last sexual experience item marked "yes," respondents were asked to provide more detail. The follow-on questions asked about the frequency and duration of the act, a description of the other person (i.e., stranger, neighbor, father, mother), respondent's age at the first occurrence, the age of the other person, and a reason why she/he understood the act occurred.

Sexual Experiences Survey (SES). Five items from the SES that ask about attempted rape and rape since the participants' 14th birthday were used to determine the prevalence of sexual assault victimization (Koss, Koss & Woodruff, 1991). The items were answered either "yes" or "no." For each item answered "yes," participants were asked to indicate how long ago the experience occurred by selecting one of five responses that ranged from "less than three months" to "more than 2 years." SES internal stability (alpha) for the five-items have not been previously reported. However, for the 11-item SES, an alpha of .74 has been reported (Koss & Oros, 1982). For the 5-item SES used in the present study, an alpha of .63 was found for the female recruit sample.

Procedure

The survey questionnaires used in the present study were administered as part of a more extensive survey package that was offered to Navy recruits during their first week at the RTC. Data collection began in January 1994 and was completed in April 1994. The survey was administered in a classroom setting by two (male and female) United States Navy Hospital Corpsmen who were psychological technicians with previous experience in administering psychological tests.

In the process of requesting that recruits participate in the study, a Corpsman read a description of the study. Recruits who agreed to participate were given a Privacy Act statement and an informed consent form that included a detailed description of the study and the procedures used to ensure anonymity. In addition, prior to the beginning of the study, the Privacy Act statement and the informed consent form were read to the participants. Participants were told that

they could "leave blank any section or questions that (you) do not want to answer" and that they were "free to stop at any time before completing the survey." In the event that the recall of past traumatic experiences caused respondent distress, participants were informed that professional counseling would be provided upon request.

RESULTS

For the total sample, 57.3% of the female recruits reported some type of childhood abuse, with 40.0% reporting physical abuse (either alone or with sexual abuse) and 39.8% reporting sexual abuse (either alone or in combination with physical abuse). The percentages of female recruits reporting the childhood and adult experience of the different types of abuse and victimization for the total sample and for several ethnic subgroups are presented in Table 1.

Table 1

Percentage of Women Reporting the Childhood and Adult Experience of Abuse and Victimization for the Total Sample and for Ethnic Subsamples

<i>Sample/Subgroup</i>	<i>Childhood experience of abuse</i>				<i>Adult victimization</i>		
	-----				-----		
	<i>None</i>	<i>Physical</i>	<i>Sexual</i>	<i>Both</i>	<i>Attempted</i> <i>None</i>	<i>Rape</i>	<i>Rape</i>
<i>Total sample (n = 1104)</i>	42.6	17.6	17.5	22.4	56.8	8.5	34.7
<i>White (n = 694)</i>	44.1	15.4	19.3	21.2	53.9	7.3	38.8
<i>Black (n = 239)</i>	40.2	24.7	12.6	22.6	61.9	13.4	24.7
<i>Hispanic (n = 86)</i>	34.9	17.4	15.1	32.6	57.0	4.7	38.4
<i>Asian American (n = 34)</i>	64.7	14.7	5.9	14.7	73.5	11.8	14.7
<i>Native American (n = 19)</i>	26.3	0.0	42.1	31.6	57.9	5.3	36.8

Note: The total sample size does not equal the total number of participants surveyed because of exclusion criteria and missing data from some participants.

The percentages of female recruits reporting attempted rape (only) and rape as a function of their childhood experience of abuse (none, physical abuse only, sexual abuse only, and physical and sexual abuse) for the total sample and for several ethnic subgroups are presented in Table 2. The percentages of female recruits reporting a childhood experience of abuse as a function of the type of sexual assault experienced (none, attempted rape, and rape) for the total female sample and for several ethnic subgroups are presented in Table 3. The data presented in Tables 2 and 3 show that the association between childhood abuse and rape varies based on whether the investigator begins with a sample that has experienced childhood abuse or begins with a sample that has experienced rape. Subsequent analyses were conducted using the total female sample and the White female, Black female, and Hispanic female subgroups. No additional analyses were conducted using the Asian American and Native American female subgroups due to their limited sample sizes.

Based on the data presented in Table 2, odds ratios were calculated to estimate the extent to which there was an increased likelihood that female recruits who experienced childhood sexual abuse (with or without child physical abuse), compared to females who did not experience childhood sexual abuse (with or without child physical abuse), would later be raped. In these computations, women who reported attempted rapes (only) were combined with the women who did not report being raped. Based on this approach, odds ratios of 4.70, 4.00, 5.85, and 9.41 were found for the total female sample, the White female subgroup, the Black female subgroup, and the Hispanic female subgroup, respectively. These odds ratios indicate that, for the total sample, women reporting child sexual abuse were 4.70 times more likely to report that they were raped, that White women reporting child sexual abuse were 4.00 times more likely to report that they were raped, that Black women reporting child sexual abuse were 5.85 times more likely to report that they were raped, and that Hispanic women reporting child sexual abuse were 9.41 times more likely to report that they were raped.

Odds ratios were calculated to estimate the increase in likelihood that female recruits who reported child sexual abuse, compared to females who did not report child sexual abuse, would later experience an attempted rape (only). Odds ratios for attempted rape (only) of 1.91, 1.65, 3.47, and 0.83 were found for the total female sample, the White female subgroup, the Black female subgroup, and the Hispanic female subgroup, respectively.

Table 2

Percentage of Women Reporting Sexual Assault as a Function of their Childhood Experience of Abuse for the Total Sample and for Ethnic Subsamples

<i>Sample/ Victimization group</i>	<i>Childhood experience of abuse</i>			
	<i>None</i>	<i>Physical</i>	<i>Sexual</i>	<i>Both</i>
<i>Total sample (n = 1104)</i>				
None	71.3	68.6	39.9	33.2
Attempted rape	8.5	8.8	8.8	8.1
Rape	20.2	22.7	51.3	58.7
<i>White (n = 694)</i>				
None	68.0	62.6	39.6	31.3
Attempted rape	7.2	9.3	6.0	7.5
Rape	24.8	28.0	54.5	61.2
<i>Black (n = 239)</i>				
None	79.2	71.2	40.0	33.3
Attempted rape	11.5	10.2	23.3	14.8
Rape	9.4	18.6	36.7	51.9
<i>Hispanic (n = 86)</i>				
None	70.0	93.3	30.8	35.7
Attempted rape	10.0	0.0	7.7	0.0
Rape	20.0	6.7	61.5	64.3
<i>Asian American (n = 34)</i>				
None	81.8	80.0	0.0	60.0
Attempted rape	13.6	0.0	0.0	20.0
Rape	4.5	20.0	100.0	20.0
<i>Native American (n = 19)</i>				
None	100.0	0.0	62.5	16.7
Attempted rape	0.0	0.0	12.5	0.0
Rape	0.0	0.0	25.0	83.3

Note: The total sample size does not equal the total number of participants surveyed because of exclusion criteria and missing data from some participants.

Table 3

Percentage of Women Reporting a Childhood Experience of Abuse as a Function of the Type of Sexual Assault Experienced for the Total Sample and for Ethnic Subsamples

<i>Sample/ Childhood abuse group</i>	<i>Victimization</i>		
	<i>None</i>	<i>Attempted rape</i>	<i>Rape</i>
<i>Total sample (n = 1104)</i>			
None	53.4	42.6	24.8
Physical	21.2	18.1	11.5
Sexual	12.3	18.1	25.8
Both	13.1	21.3	37.9
<i>White (n = 694)</i>			
None	55.6	43.1	28.3
Physical	17.9	19.6	11.2
Sexual	14.2	15.7	27.1
Both	12.3	21.6	33.5
<i>Black (n = 239)</i>			
None	51.4	34.4	15.3
Physical	28.4	18.8	18.6
Sexual	8.1	21.9	18.6
Both	12.2	25.0	47.5
<i>Hispanic (n = 86)</i>			
None	42.9	75.0	18.2
Physical	28.6	0.0	3.0
Sexual	8.2	25.0	24.2
Both	20.4	0.0	54.5
<i>Asian American (n = 34)</i>			
None	72.0	75.0	20.0
Physical	16.0	0.0	20.0
Sexual	0.0	0.0	40.0
Both	12.0	25.0	20.0
<i>Native American (n = 19)</i>			
None	45.5	0.0	0.0
Physical	0.0	0.0	0.0
Sexual	45.5	100.0	28.6
Both	9.1	0.0	71.4

Next, odds ratios were calculated to estimate the increase in likelihood that female recruits who experienced child physical abuse (only), compared to females who did not experience any child abuse, would later experience a rape (attempted rapes were included in the no-rape group). Odds ratios for rape of 1.16, 1.18, 2.22, and 0.29 were found for the total female sample, the White female subgroup, the Black female subgroup, and the Hispanic female subgroup, respectively.

As presented in Table 4, simultaneous logistic regression analyses were conducted using the report of a child sexual abuse (with or without child physical abuse), the number of sex partners, the extent of alcohol problems, and interaction of the number of sex partners and the extent of alcohol problems to predict the experience of rape. This analysis was conducted for the total sample, and was repeated for the White, Black, and Hispanic female subgroups.

The regression analyses presented in Table 4 revealed that for the total sample and the White subsample, child sexual abuse accounted for the most variance in predicting subsequent rape, with the number of sex partners and alcohol problems, but not the interaction of number of sex partners and alcohol problems, making modest independent contributions. However, for the Black and the Hispanic female subgroups, only child sexual abuse accounted for a significant amount of variance in predicting subsequent rape. The number of sex partners, alcohol problems, and the interaction of these variables did not make additional contributions to the prediction.

Post-hoc analyses were conducted to determine if demographic differences existed between the White, Black, and Hispanic female samples to determine if demographic differences might have contributed to ethnic differences observed in the regression analyses. No significant differences between the three ethnic groups were found for age, $F(2, 1001) = 1.13, p > .05$, marital status (single/other), $\chi^2(2, N = 1047) = 5.01, p > .05$, and education, $\chi^2(4, N = 1046) = 6.48, p > .05$. However, a significant difference was found between the ethnic groups for family income, $\chi^2(10, N = 1029) = 48.04, p < .0001$, with White females reporting a higher family income than Black and Hispanic females.

Table 4

*Simultaneous Regression Analyses Describing
the Association between Childhood Abuse,
Number of Sex Partners, Alcohol Use, and
Rape for the Total Sample and for Ethnic
Subsamples*

<i>Sample</i>	<i>e^b</i>	<i>SE B</i>	<i>β</i>
<i>Total sample (N = 795)</i>			
Child sex abuse	3.84	0.16	1.35**
Number sex partners	1.39	0.08	0.33**
Alcohol problems	1.12	0.05	0.11
Partners X alcohol	0.99	0.01	-0.01
<i>White sample (N = 565)</i>			
Child sex abuse	3.58	0.19	1.28**
Number sex partners	1.48	0.10	0.39**
Alcohol problems	1.13	0.06	0.12
Partners X alcohol	0.99	0.13	-0.01
<i>Black sample (N = 162)</i>			
Child sex abuse	3.85	0.38	1.35**
Number sex partners	1.25	0.19	0.23
Alcohol problems	1.13	0.13	0.12
Partners X alcohol	0.98	0.04	-0.02
<i>Hispanic sample (N = 68)</i>			
Child sex abuse	7.60	0.61	2.03**
Number sex partners	1.46	0.46	0.38
Alcohol problems	1.12	0.31	0.11
Partners X alcohol	0.99	0.09	-0.01

Note. For the total sample, $R^2 = .06$ for child sexual abuse; $R^2 = .02$ for number of sex partners. For the White sample, $R^2 = .05$ for child sexual abuse; $R^2 = .02$ for number of sex partners. For the Black sample, $R^2 = .06$ for child sexual abuse. For the Hispanic sample, $R^2 = .10$ for child sexual abuse. ** $p < .001$.

DISCUSSION

The results of the present study are consistent with a body of literature indicating that women with a childhood history of sexual abuse are at increased risk of being sexually revictimized as adults. Based on odds ratios, the risk of revictimization is substantial; White female recruits were four times more likely to report having been raped, Black female recruits were six times more likely, and Hispanic female recruits nine times more likely to report having been raped if they had been sexually abused in childhood. For all three ethnic groups, the percent of women raped was highest if they had suffered from combined physical and sexual abuse in childhood. The finding that the combined abuse group was at greater risk of revictimization is consistent with the findings of Wind and Silvern (1992) and Cloitre et al. (1996), both of whom reported higher rates of adult sexual assault are associated with combined physical and sexual abuse in childhood. Wind and Silvern defined sexual assault as "unwanted sexual contact," whereas Cloitre et al. defined sexual assault as rape or attempted rape. Despite differences in definitions, the current study supports previous findings using a larger sample.

Although differences were found between White, Black, and Hispanic women in rates of sexual assault and revictimization in the present study, interpreting these differences should be done with caution because of limited sample sizes and the finding that the ethnic groups were heterogeneous with regard to family income. Urquiza and Goodlin-Jones (1994) is the only other study to report on ethnic differences in rates of rape and revictimization. They reported that regardless of child sexual abuse history, in their study 25.5% of White women, 37.9% of Black women, and 17.9% of Hispanic women were raped. The rape figures for White, Black, and Hispanic women in the present study were 38.6%, 24.8%, and 37.2%, respectively. Thus, the present study, compared to Urquiza and Goodlin-Jones (1994), found higher rates of rape in White and Hispanic female recruits and lower rates for Black female recruits.

For women who reported a childhood experience of sexual abuse, Urquiza and Goodlin-Jones (1994) found revictimization (rape) rates for White, Black, and Hispanic women were 44.2%, 61.5%, and 40.0% respectively. The revictimization rates for White, Black, and Hispanic women in the present study were 58.0%, 46.4%, and 63.4%, respectively. The present study found a higher rate of revictimization for White and Hispanic women with 163 of the 281 White women and 26 of the 41 Hispanic women who reported sexual abuse or sexual plus physical abuse

reporting rape as an adult. To the degree possible, future research should report data by ethnic groups so that the extent that revictimization rates vary as a function of ethnic differences can be determined.

Although there is substantial evidence that childhood abuse increases the risk of subsequent revictimization as an adult, the process by which this occurs has not been determined. Research examining differences between women with similar childhood abuse histories who are and are not revictimized as adults would be useful in identifying risk variables. Several variables may be implicated in the pathway from childhood abuse to revictimization including: family support and cohesion, attachment style, style of coping with the childhood abuse, involvement in delinquent and drug behaviors, and sexual experience (Gold, Sinclair, & Balge, 1997).

In the present study, the regression analyses provided some support for the hypothesis that a history of child sexual abuse, number of sex partners, and alcohol problems predict revictimization. For the total sample and the White subsample, all three variables contributed to the prediction of the sexual revictimization. For the Black and Hispanic subsample, however, only the childhood sexual abuse experience was a significant predictor of revictimization. These findings suggest that child sexual abuse is the first step in a path toward subsequent adult victimization, but that other contributing factors may vary as a function of ethnic background. Further, the fact that only a modest amount of variance was explained by any of the variables indicates the need to examine other factors that may moderate or mediate revictimization.

For example, child sexual abuse victims have been found to suffer from a myriad of later problems including sexual difficulties (Beitchman et al., 1992). Some aspects of the childhood trauma increase the likelihood that victims will later engage in high-risk behaviors (Wyatt et al., 1992). Perhaps risky behavior is a reflection of victims' low self-esteem (Bachman, Moeller & Bennett, 1988; Rew, 1989), a consequence of "traumatic sexualization" (Finkelhor & Browne, 1985), lack of family support, a tendency to associate with a more delinquent peer group, or a combination of these factors.

The present study has several limitations that should be mentioned. Participants were asked about physically abusive behavior (as measured by the CTS Severe Violence scale) that occurred prior to the age of 18 years and sexual abuse that occurred prior to the age or 14 years. The age difference in defining different forms of child abuse may be seen as a study limitation. However,

it might be noted that Wauchope and Straus (1990) have reported that the majority of very severe violence (as measured by the CTS) is directed at children who are less than 14 years of age.

Another issue is that the data are based on self-reports that required female recruits to describe experiences that occurred many years in the past. In a retrospective study, it is difficult to evaluate how much current experiences have influenced the memory of earlier events. For example, it may be that women who are raped are more likely to view childhood experiences as abusive or even have more distorted memories of childhood events than women who are not raped. It is also possible that women with a childhood history of abuse are more likely to define an adult sexual experience as being coerced and label it as rape.

Finally, there is another limitation which applies to all research that investigates the relationship between female sexual victimization and later revictimization that assesses only women. Most, and some would posit all, of the explanation of why women are victimized and revictimized is due to perpetrator characteristics not victim characteristics. To the extent that this is true, studies examining only victim characteristics, such as the present study, will never account for much of the variance when attempting to explain revictimization.

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